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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,256	12/12/2000	Cathy L. Blouin	BUR9-2000-0050-US1	4768

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EXAMINER

WOO, RICHARD SUKYOON

ART UNIT	PAPER NUMBER
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3629

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,256

Applicant(s)

BLOUIN ET AL.

Examiner

Richard Woo

Art Unit

3629

NW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

- 1) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 2) Claims 4-7, 11-12, 19-20, 24-25 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 4, lines 1-2, the recitation of "a future technology" renders the claim indefinite because it is not clear what kind of technology constitutes the future technology. It is noted that the applicant has to particularly point out and distinctly claim the subject matter instead of claiming something unknown at the time the invention was made to the applicant. The Claims 11, 19 and 24 subsequently suffer the similar indefiniteness.

In Claim 6, line 1; and Claim 7, line 1, respectively, the recitation of "said relationships" lacks antecedent basis.

In Claim 27, lines 2-3, the recitation of "said historical groundrules" lacks antecedent basis.

Claim Rejections - 35 USC § 102

- 3) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3629

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4) Claims 1-27, as far as Claims 4-7, 11-12, 19-20, 24-25 and 27 are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by "21st Semiconductor Manufacturing Capabilities" (hereinafter "Manufacturing").

As for Claim 1, Manufacturing discloses a system comprising:

a storage medium (inherently the "Next Generation Manufacturing" must have the storage medium to store pertinent data) including a database of historical critical dimensions and historical critical groundrules correlated to cost functions at the fabricator (see Figs. and Tables);

a user interface having user inputs for new design parameters and new critical groundrules associated with a new device to be produced at the fabricator; and

a computer adapted to receive the user inputs, extract data from the storage medium perform a regression analysis on the data, and compute semiconductor costs for the new device (see the entirety of document, to note how "Operational modeling and simulation" and "Knowledge Management" work to compute the costs for the new design).

As for Claim 2, Manufacturing further discloses the system, wherein the historical critical dimensions and the new critical dimensions include gate dimensions (see Supra Figs. and tables).

Art Unit: 3629

As for Claim 3, Manufacturing further discloses the system, wherein the new critical dimensions are smaller than the historical critical dimensions (see Id.).

As for Claim 4, Manufacturing further discloses the system, wherein the new device includes a future technology generation.

As for Claim 5, Manufacturing further discloses the system, wherein fabrication hardware and fabrication methods for producing the future technology generation are unknown.

As for Claim 6, Manufacturing further discloses the system, wherein relationships include base models and models that include options (see Figs. and Tables).

As for Claim 7, Manufacturing further discloses the system, wherein relationships include models that illustrate that costs increase exponentially as the historical critical dimensions and the historical critical groundrules are reduced (see Supra Figs. and Tables).

As for Claim 8, Manufacturing discloses a method comprising the steps of:
performing a regression analysis on historical costs of historical critical dimensions at a fabricator, using the dimensions as independent variable and the costs as dependent variables (see Figs. and tables and generally the entirety of the disclosure);

creating, in a database, models from the regression analysis showing a relationship between the dimensions and costs (see Supra Figs. and Tables); and

inputting new design parameters and new critical dimensions of a new device into the database and predicting product costs of the new device based on the models (see Id.).

As for Claim 9, Manufacturing further discloses the method, wherein the historical critical dimensions and the new critical dimensions include gate dimensions (see Supra Figs. and Tables).

As for Claim 10, Manufacturing further discloses the method, wherein the new critical dimensions are smaller than the historical critical dimensions (see Id.).

As for Claim 11, Manufacturing further discloses the method, wherein the new device includes a future technology generation.

As for Claim 12, Manufacturing further discloses the method, wherein fabrication hardware and fabrication methods for producing the future technology generation are unknown.

As for Claim 13, Manufacturing further discloses the method, wherein relationships include base models and models that include options (see Supra Figs. and Tables).

As for Claim 14, manufacturing further discloses the method, wherein relationships include models that illustrate that costs increase exponentially as the historical critical dimensions and the historical critical groundrules are reduced (see Id.).

As for Claim 15, Manufacturing discloses a system comprising:

Art Unit: 3629

a regression analyzer adapted to determine relationships between historical critical dimensions of historical technologies and costs of historical technologies (see the entirety of document, to note how “Operational modeling and simulation” and “Knowledge Management” work to compute the costs for the new design);

a user interface for inputting a new critical dimension of a new technology; and

a calculator for predicting a cost of the new technology based on the new critical dimension and the relationships (see Figs. and Tables).

As for Claim 16, Manufacturing further discloses the system, wherein the historical critical dimensions and the new critical dimensions include gate dimensions (see *Supra* Figs. and Tables).

As for Claim 17, Manufacturing further discloses the system, wherein the new dimensions are smaller than the historical dimensions (see *Id.*).

As for Claim 18, Manufacturing further discloses the system including a storage unit adapted to store a database of the relationships.

As for Claim 19, Manufacturing further discloses the system, wherein the new device includes a future technology generation.

As for Claim 20, Manufacturing further discloses the system, wherein fabrication hardware and fabrication methods for producing the future technology generation are unknown.

As for Claim 21, Manufacturing discloses a method comprising:

Art Unit: 3629

performing a regression analysis on historical costs of historical critical dimensions at a fabricator, using the dimensions as independent variable and the costs as dependent variables (see the entirety of document, to note how "Operational modeling and simulation" and "Knowledge Management" work to compute the costs for the new design);

creating, in a database, models from the regression analysis showing a relationship between the dimensions and costs; and

inputting new design parameters and new critical dimensions of a new device into the database and predicting product costs of the new device based on the models (see Figs. and Tables).

As for Claim 22, Manufacturing further discloses the method, wherein the historical critical dimensions and the new critical dimensions include gate dimensions (see *Supra* Figs. and Tables).

As for Claim 23, Manufacturing further discloses the method, wherein the new critical dimensions are smaller than the historical critical dimensions (see *Id.*).

As for Claim 24, Manufacturing further discloses the method, wherein the new device includes a future technology generation.

As for Claim 25, Manufacturing further discloses the method, wherein fabrication hardware and fabrication methods for producing the future technology generation are unknown.

Art Unit: 3629

As for Claim 26, Manufacturing further discloses the method, wherein relationships include base models and models that include options (see Figs. and Tables).

As for Claim 27, Manufacturing further discloses the method, wherein relationships include models that illustrate that costs increase exponentially as the historical critical dimensions and the historical critical groundrules are reduced (see Id.).

Conclusion

5) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"Enhanced dataConductor Introduced by Syntricity at the International Test Conference 2000 in Atlantic City" is cited to show a web-based software solution that literally manages and analyzes performance and functionality data at any time.

US 6,470,229 is cited to show a system and method for yield management wherein a data set containing one or more prediction variable values and one or more response values is input into the system.

JP 2000-91178 is cited to show a system to control production by adjusting the production according to a predicted yield by obtaining a regression expression for predicting the yield from production control data in a wafer treatment process.

"Statistically Based Parametric Yield Prediction for IC" is cited to show a procedure for predicting IC parametric performance and yield when provided with sample transistor test results and a circuit schematic.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Woo whose telephone number is 703-308-

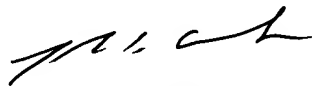
Art Unit: 3629

7830. The examiner can normally be reached on Monday-Friday from 8:30 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Weiss can be reached on 703-308-2702. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.


Richard Woo
GAU 3629
June 26, 2004


JOHN G. WEISS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600